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Information Processing Induced During an Educational Program

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INFORMATION PROCESSING INDUCED DURING AN EDUCATIONAL PROGRAM

by

Darrin Halsey

A Thesis

Presented to the Graduate Committee

of Lehigh University

in Candidacy for the Degree of

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in

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I. **Abstract**

This thesis examines the way students process information presented in an educational program. The research was conducted by observing Lehigh University students during and immediately following a rape education program, talking to them informally prior to the program as well as conducting interviews directly upon the completion of the program. Observations and evaluations of the program and interviews with program participants were used to examine attitude formation.

Variables measuring cognitive and heuristic cues used during attitude formation and information processing were examined. Eight targeted variables were identified as contributing to information processing by the two descriptive models examined: the Elaboration Likelihood Model (Petty and Cacioppo, 1986) and the Heuristic Systematic Model (Chaiken, 1987).

The explanatory power of the ELM and HSM were compared using the ethnographic data gathered. The descriptive elements of the models tested with this study's data and problems with each were explored. Four variables were determined to be the most important in influencing the information processing: (1) *Audience Reaction/Consensus*, (2) *Motivation to Process*, (3) *Prior Knowledge*, and (4) *Issue Involvement/Relevance*. From the evidence examined concerning these variables, support was found for the HSM as a more

functional model of cognitive information processing. Also, considered at some length was the influence of *affect* on the process. There is a demonstrable need for further work in examining the influence of *affect* on cognitive information processing.

II. **Introduction**

This project will investigate and explore the cognitive processes that occur when individuals are presented with information designed to persuade in the context of participating in an educational program on the Lehigh University campus. I will examine the Elaboration Likelihood (Petty and Cacioppo, 1986) and the Heuristic Systematic Models (Chaiken, 1987; Eagly and Chaiken, 1984) as two cognitive approaches to information processing. Both explain the process and predict the extent to which any kind of cognitive processing occurs. The two models differ in that the Elaboration Likelihood Model (ELM) considers two distinct and mutually exclusive "routes" to persuasion, labeled the "central" and "peripheral". The Heuristic Systematic Model (HSM) considers two "routes" in which parallel processing occurs, designated the "heuristic" and the "systematic". I am not interested in the extent or direction of change relative to information processing but, rather, with the actual process itself. Specifically, I will be examining the process undertaken and observed during a persuasive educational

setting. While this differs from much of the previous literature, interest in the methods of information processing is a significant component of social psychology. Evaluation of the data will look for evidence supporting either the Elaboration Likelihood Model or the Heuristic Systematic Model.

A. Background

The study of attitudes and persuasion began as the central focus of social psychology (Allport, 1935). The study of attitudes and how they change is a theoretically rich and empirically active area within social psychology. Recently, there has been a resurgence in interest in cognitive information processing theories concerning attitude formation and change. Information processing is a major theme, especially in the persuasion literature, and may account for the renewed interest investigators are showing in many classic research problems (Eagly and Himmelfarb, 1978).

Much of the work done in information processing has been under the conceptual umbrella of persuasion and influence research. Persuasion research investigates attitude change that occurs in response to relatively complex messages and situations. A majority of the literature is concerned with how individuals in our society communicate towards the goal of affecting some change in others.

Based to a large degree on the *Yale attitude approach*, persuasive communication relies on a stimulus-

response paradigm. The Yale theorists argue that persuasive messages are stimuli that provide incentives for the desired responses (Trenholm, 1989, p. 49). The communication process (illustrated by the Yale approach; see Appendix A, Figure 1) can be analyzed on the basis of a wide variety of principles which yield different sets of components (McGuire, 1969). The process can be divided into five components: *source*, *message*, *channel*, *receiver*, and *destination*. Each of these five components contribute variables that have an effect on attitude formation and change. By *source* variables, the Yale group meant the attributes of the perceived source of the message; *message* factors include the content and structure of what is said. *Channel* factors have to do with the means by or the context in which the message is presented. It has been argued that the medium through which the message is communicated has more impact on the receiver than does the message content (McLuhan, 1964; McLuhan and Fiore, 1967; as cited by McGuire, 1969).[1] *Receiver* factors include the characteristics of the person who is receiving the message. Under *destination* factors, we include variables having to do with the exact target of the message, that is, what is the desired effect of the persuasive situation (McGuire, 1969).

When a communicator presents a view on an issue, the message itself is a primary source of information, but so are

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[1] This contention is one of the key questions of this study.

the communicator's attributes and the audience's identity and reactions (Eagly and Himmelfarb, 1978). This study will examine two cognitive approaches to information processing and persuasion. Cognitive approaches to persuasion emphasize the receiver as an active processor of the information presented to him/her. Developing from the *Yale Communication Approach* and preceding cognitive approaches to persuasion, theories based on social comparison and attitudes consistency were developed in an effort to understand information processing.

B. **Early Work**

It has long been argued that educational programs conducted by peers (students to students, etc.) may be the most effective form of educational practice. There is considerable body of evidence that a person is influenced by a persuasive message to the extent that he perceives it as coming from a source similar to himself (McGuire, 1969).

As already discussed, the medium through which the message is communicated may have more impact on the receiver than does the message content (McLuhan, 1964; McLuhan and Fiore, 1967; as cited by McGuire, 1969). Along with source similarity factors, the influence of the medium can be interpreted to lend credence to peers educating peers because of the importance given to the type of language and vocabulary used in discussions of some educational topics. Individuals of similar experiences and backgrounds are able to convey ideas in terms (vocabulary) conducive to increased interest

and discussion. The increased interest and discussion could be the result of the assimilation-contrast theory.

Put forward by Sherif and Hovland (1961), the assimilation-contrast theory describes a "latitude of acceptance"; a critical range of similarity around one's own position on an issue such that if a source's opinion falls within this range, it is perceived as lying even closer than it really does and therefore, the individual changes his/her own opinion towards the source's. If the source's opinion lies outside this range (and beyond a median zone of indifference), then the "latitude of rejection" causes the source's opinion to be perceived as even farther away from the individual's; the person then changes his/her opinion even more so in the opposite direction, causing a contrast effect. Along with the assimilation-contrast theory, the consistency-theory approach described by McGuire (1969) can be considered to have followed the *Yale Approach* and preceded the cognitive approaches examined by my study.

The basic notion of the consistency-theory approach to attitude change is that the individual adjusts his/her attitudes and behavior in order to keep a maximum degree of internal harmony with his/her belief system and between his/her beliefs and his/her action. (McGuire, 1969). In other words, the individual's dominant motivational concern could be assumed to be the desire to form or to hold valid, accurate attitudes -- that is, to attain attitudes that are

perceived to be congruent with relevant facts (Chaiken, Liberman and Eagly, 1989). People are motivated to hold correct attitudes (Festinger, 1950: as cited in Petty and Cacioppo, 1986).

The development of cognitive approaches to information processing is a more contemporary approach to attitude formation and change research. It is accepted that receivers of information may not be able to actively assess all of the information presented in a given situation (McGuire, 1969, 1985). Cognitive information processing is one set of approaches which holds that receivers are constantly subjected to information and must decide what is most relevant and useful to their situation (Trenholm, 1989, p. 53). Cognitive information processing approaches, in developing from earlier work on attitude formation research, have as an essential assumption that individuals have a desire to form and hold correct opinions and attitudes about an issue or issues. People must decide what is relevant and useful to their situation in view of this objective.

As previously indicated, this paper will address two descriptive models of information processing in an effort to understand the process and targeted variables which influence the process, as it is related to educational programs. It will then describe the present study and the methods used to gather the relevant data. Finally, the paper will conclude with results, conclusions, and implications for further research.

III. Findings from Review of Contemporary Literature

A. Elaboration Likelihood Model

As noted previously, much research in the persuasion and influence literature has focused on the cognitive analysis of persuasion (Eagly and Chaiken, 1984). One of the more influential theories is the Elaboration Likelihood Model of Petty and Cacioppo (1986). The ELM provides a fairly general framework for organizing, categorizing, and understanding the basic processes underlying the effectiveness of persuasive communications (Petty and Cacioppo, 1986).

After reviewing the literature on attitude persistence, Petty and Cacioppo conclude that the many different empirical findings and theories in the field might profitably be viewed as emphasizing one of just two relatively distinct routes to persuasion (Petty and Cacioppo, 1986). The first type of persuasion is that which likely results from a person's careful and thoughtful consideration of the true merits of the information presented in support of an advocacy (central route). The other type of persuasion, however, is that which is more likely to occur as a result of some simple cue in the persuasion context (e.g., an attractive source) that induces change without necessitating scrutiny of the true merits of the information presented (peripheral route) (Petty and Cacioppo, 1986).

Very simply, the central route is the approach defined as active and cognitive elaboration of information

presented to a subject. This approach hinges on the subject being *motivated* to elaborate the information or views presented to him/her. If the subject is motivated to process, the model contends that the individual will cognitively examine the information presented and consider the argument proposed very carefully with regard to any prior attitudes or knowledge, the quality of the argument, etc. Any change in the cognitive structure of the individual would be the result of active consideration of the argument with an eye towards holding correct attitudes (Petty et al., 1988, 1991). Any change or reinforcement of existing attitudes is considered to be relatively enduring, resistant to change, and predictive of future behavior when the central route is undertaken.

According to the process undertaken by the peripheral route, the subject is not motivated to process the information presented to him/her (or the individual's ability to process the information is inhibited in some way). In light of any problem or difficulty, it is proposed that the subject responds to *peripheral* or *heuristic* cues from the situation. Examples of these *peripheral cues* would include: attractiveness of the source (of the message/information), expertise of the source, pleasant surroundings, the number of arguments presented, etc. The subject, rather than actively processing the information presented to him/her, will rely on these cues to decide whether or not to accept the argument presented. If the individual uses the peripheral route based

upon the cues presented, any attitude shift is considered by the ELM to be relatively temporary, susceptible to change, and not predictive of future behavior.[2] In the following exploration of the ELM, I will be identifying variables which will be examined later in my study.

There are, according to Petty and Cacioppo (1986), seven postulates or components that guide the ELM. While some of these have been mentioned in the previous simplified discussion, all seven will be noted and discussed further.

Postulate I: "People are motivated to hold correct attitudes" (p. 127). Postulate I is the most important guiding principle of the ELM. All of the descriptive and predictive potential of the model rests on this initial assumption.

Postulate II: "Although people want to hold correct attitudes, the amount and nature of issue-relevant elaboration in which people are willing or able to engage to evaluate a message vary with individual and situational factors" (p. 128). By *elaboration* in a persuasion context, Petty and Cacioppo mean the extent to which a person thinks about the issue-relevant arguments contained in a message. When conditions foster people's motivation and ability to engage in issue-relevant thinking, the "elaboration likelihood" is said to be high (Petty and Cacioppo, 1986).

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[2] Please refer to Appendix A, Figure 2 for the schematic diagram representing the ELM.

Conversely, if there is little or no motivation and/or ability, an individual would be considered to be low in "elaboration likelihood". These conditions predict which of the two routes to persuasion (see Appendix A, Figure 2) an individual would embark upon.

Postulate III: "Variables can affect the amount and direction of attitude change by: (A) serving as persuasive arguments, (B) serving as peripheral cues, and/or (C) affecting the extent or direction of issue and argument elaboration" (p. 132). Persuasive arguments are viewed as bits of information contained in a communication that are relevant to a person's subjective determination of the true merits of an advocated position. Because people hold attitudes for many different reasons, people will invariably differ in the kinds of information they feel are central to the merits of any position (Snyder and DeBono, 1985, as cited in Petty and Cacioppo, 1986). In researching the ELM, Petty and Cacioppo have manipulated the quality of the arguments such that the degree to which an argument is determined strong or weak can be empirically examined.

As discussed earlier, another possibility is that a simple cue in the persuasion context affects attitudes in the absence of argument processing. Cue effect has been manipulated by Petty and Cacioppo such that cues are presented in persuasive settings without any argumentation to determine the ability of cues to affect change. The last part of

Postulate III considers the extent or direction of issue elaboration. It is concerned with measuring the amount of attitude change that occurs due to the persuasive situation. Because my study is not concerned with this measurement, but rather the process individuals undergo in a persuasive situation, Postulate III is not an integral part of our discussion.

Postulate IV: "Affecting motivation and/or ability to process a message in a relatively objective manner can do so by either enhancing or reducing argument scrutiny" (p. 138). Postulate IV is concerned with the manipulation of some of the same variables targeted by this study. In manipulating variables such as: distraction, repetition, personal relevance/involvement, personal responsibility and need for cognition, Petty and Cacioppo have examined how the process is affected in different persuasive situations. In discussing the variables targeted for examination herein, Petty and Cacioppo's manipulations will be addressed.

Postulate V: "As motivation and/or ability to process arguments is decreased, peripheral cues become relatively more important determinants of persuasion. Conversely, as argument scrutiny is increased, peripheral cues become relatively less important determinants of persuasion" (p. 152). Postulate V is borne out by Petty and Cacioppo's research (1984, 1986). The empirical research

examining this postulate is concerned with some of the same variables that have been targeted for study in the following examination.

Postulate VI: "Variables affecting message processing in a relatively biased manner can produce either a positive (favorable) or negative (unfavorable) motivational and/or ability bias to the issue-relevant thoughts attempted" (p. 163). Postulate VI works in conjunction with Postulate IV because, according to Petty and Cacioppo, variables can affect argument processing in a relatively objective or a relatively biased manner (Petty and Cacioppo, 1981, 1986). In relatively *objective* processing, some treatment variable either motivates or enables individuals to see the strengths of cogent arguments and the flaws in specious ones, or inhibits them from cognitively processing the information. In relatively *biased* processing some variable either motivates or enables individuals to generate a particular kind of thought in response to a message, or inhibits a particular kind of thought.

Objective elaboration is considered to be relatively impartial and "data" driven, while biased elaboration is considered to be directed by a relevant attitude schema which guides processing in a manner leading to the maintenance or strengthening of that schema (Landman and Manis, 1983, as cited by Petty and Cacioppo, 1986). It may be considered that the variables a subject identifies with and views as important

will determine whether the processing was objective or biased. There is empirical support relating certain variables to either objective or biased processing (Petty and Cacioppo, 1986).

Postulate VII: "Attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behavior, and greater resistance to counterpersuasion than attitude changes that result mostly from peripheral cues" (p. 175). Postulate VII has already been considered, and is due to Petty and Cacioppo's contention that attitude change via the central route involves considerably more active and cognitive work than attitude change induced by the peripheral route. Their contention has been debated recently and is one of the shortcomings found with the ELM that will be discussed in the next section.

Concerns with ELM

While there is much empirical data compiled by Petty and Cacioppo in support of the ELM, universal support for the model does not exist. Although Petty and Cacioppo clearly outline the types of processing strategies available to individuals, highlight the factors that influence the use of these strategies, and forecast the persuasive impact of these cognitive responses, they do little to document and explain the information processing choices humans make when evaluating persuasive messages (Stiff, 1986).

The ELM is a model of human information processing centering on the strategies individuals use to process information. However, Petty and Cacioppo fail to assess directly the cognitive processes themselves. In fact, the validity of the model is dependent upon two unchecked assumptions about individuals' abilities to process information: (1) message recipients are forced to choose between one of the two information processing strategies, and (2) an individual's involvement with the message is positively related to the processing of central cues and negatively related to the processing of peripheral cues (Stiff, 1986).

The first implied premise of the ELM is that individuals have a limited capacity for actively processing information. It is assumed that individuals are presented with more information than they can possibly handle. Although individuals are capable of registering incoming stimuli from different sources, they cannot respond cognitively to different stimuli simultaneously. As a coping mechanism, individuals choose to actively process messages of great import and to process less actively and systematically messages of lesser import. Hence, messages that are high in personal relevance receive more scrutiny than messages low in personal relevance. This forces the recipients to make a decision about what cues to process and thus, individuals process either central or peripheral cues and are unaffected by the unchosen set of cues (Stiff, 1986).

The schematic diagram of ELM (see Appendix A, Figure 2) represents the routes individuals choose when engaging in either central or peripheral information processing. At each decision point along the diagram, individuals are depicted as channeling their efforts towards *either* central *or* peripheral processing, but not both (Stiff and Bolster, 1987). This difficulty makes the ELM most analogous and similar to single channel processing models. The ELM suggests that although individuals are capable of registering incoming stimuli from different sources, they cannot actively respond to different stimuli simultaneously (Stiff, 1986). In contrast to the single channel view of information processing, Stiff (1986) would propose a parallel multi-channel processing extension of the ELM incorporating the work done by Kahneman (1973).

In 1973, Kahneman introduced his elastic capacity view of information processing (see Appendix A, Figure 3). His model suggests that humans are multi-channel limited capacity processors of information capable of parallel stimulus processing. Within the bounds of a fixed upper limit, the amount of processing capacity available to an individual varies and is a function of the difficulty of the task. Individuals processing difficult tasks exert more effort, and therefore have more capacity available than individuals processing simple tasks (as cited in Stiff, 1987). The processing function is such that it asymptotes at high

levels of task difficulty (see Appendix A, Figure 3). Individuals allocate capacity between primary and secondary processing tasks. At low levels of task demand, the amount of capacity used for the primary task is much less than the total capacity, leaving substantial "spare" capacity for simultaneous secondary information processing. At higher levels of primary task demand, the amount of capacity used for the primary task approaches total capacity leaving little "spare" capacity for secondary information processing (Kahneman, 1973; Stiff, 1986). Existing research on motivation and attention provides support for Kahneman's model. Stiff (1986) cites Bahrick, Fitts and Rankin, 1952; Bursill, 1958; Cornsweet, 1959; Kahneman, Peavler, and Onuska, 1968 and Hockey, 1970, for research which has demonstrated that high levels of arousal cause attention to be focused on a few central aspects of the situation at the expense of less central extraneous aspects.

Incorporating Kahneman's model with that of the ELM, Stiff (1986) believes would result in a parallel processing model which presents a more useful representation of the persuasion process. In the extended ELM proposed by Stiff (1986), he contends that during persuasive message evaluation individuals tend to focus primarily on one type of cue and secondarily on any other(s). Attention and processing capacity are directed toward the primary cues. Processing capacity that is available after the primary cues have

received their allocation is then available for secondary cue processing (Stiff, 1986).

Postulate VII states that "Attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behavior, and greater resistance to counterpersuasion than attitude changes that result mostly from peripheral cues" (Petty and Cacioppo, 1986). It is assumed by this postulate that processing undertaken through the central route is therefore more positively related to attitude formation and change. This is the second unchecked assumption of Petty and Cacioppo which has not been supported in the literature. The meta-analytic literature concerning the ELM finds lack of support for the ELM's contention concerning the relation of the central route to positive attitude formation and change (Stiff, 1986; Stiff and Bolster, 1987).

Also overlooked by the ELM is the role of *affect* in cognitive information processing. The ELM seems to imply that most affectively mediated changes in attitude are peripheral in nature and, hence, less durable or meaningful. The role of affect in information processing has been recently debated (Bohner, Hunyadi, & Chaiken, 1992, under review; Petty and Wegener, 1991; Petty, Gleicher, and Baker, 1991; Petty, Cacioppo, Sedikides & Strathman, 1988; Chaiken and Stangor, 1987; Wu and Shaffer, 1987; McGuire, 1985). In contrast to

the interpretation of *affect* by the ELM, it might be considered that *affective* responses can play a more central role in persuasion: specifically, strong emotional reactions stemming from affectively salient and accessible attitudes may be an important spark that ignites both the generation and the consolidation of those message relevant elaborations that underlie persuasion according to the central route (Wu and Shaffer, 1987).

It is a reasonable assumption that positive affective experiences and states tend to be associated with enhanced persuasion and more favorable attitudes, whereas negative affective states tend to be associated with reduced persuasion and less favorable attitudes (McGuire, 1985). This is not accepted by Petty et al.(1988, 1991). Their contention is that *affect* works as any other variable in the ELM and can work as either an argument for issue-relevant processing, a simple cue, by influencing the extent of information processing, or by influencing the types of thoughts that come to mind (Petty et al., 1991). According to Stiff and Bolster (1987), the ability of variables to act in any way that might cause information processing in the ELM produces a model that is unassailable and unfalsifiable. *A priori*, any processing that may occur can be explained. In effect, it has produced a model that might not truly explain the **process** involved in information processing. Another cognitive information

processing model such as the Heuristic Systematic Model may be examined for similarities and differences.

B. Heuristic Systematic Model

Similar to the ELM in the cognitive approaches to information processing is the Heuristic Systematic Model (HSM; Chaiken, 1987; Eagly and Chaiken, 1984; Chaiken, Liberman and Eagly, 1989). The HSM was developed to apply to persuasion settings in which the individual's dominant motivational concern could be assumed to be the desire to form or to hold valid and accurate attitudes. In other words, to attain attitudes that are perceived to be congruent with relevant facts, the HSM assumes that the primary processing goal of message recipients is to assess the validity of the persuasive messages they encounter. Moreover, the model assumes that both heuristic and systematic processing occur in the service of the goal assessing message validity (Chaiken, 1987; Chaiken et al., 1989).

Systematic processing is conceived as a comprehensive, analytic orientation in which receivers access and scrutinize all informational input for its relevance and importance to their judgement task, and integrate all useful information in forming their judgements. Systematic processing refers to the upper end of a data-seeking/analysis/integration continuum and, as such, is assumed to require more than marginal levels of effort and

cognitive capacity (Chaiken, Liberman and Eagly, 1989). As it is most similar to the central route of the ELM, the systematic mode of processing also assumes that people must be motivated to process information and is subject to much of the same problems that may occur according to the ELM when the persuasive situation is disruptive or not conducive to information processing.

Heuristic processing is a more limited processing mode that demands much less active cognitive effort and capacity than systematic processing. When processing in the heuristic mode, individuals focus on that subset of available information that enables them to use simple inferential rules, schemata, or cognitive heuristics to formulate their judgements and decisions. Recipients utilize minimal informational input in conjunction with simple knowledge structures to determine message validity quickly and efficiently. Because heuristic processing entails minimal amounts of data collection and analysis, it might be construed as anchoring the low end of a systematic-processing continuum (Chaiken, Liberman and Eagly, 1989).

The rules or heuristics that define heuristic processing are learned knowledge structures that may be used either self-consciously or non-self-consciously by social perceivers (Chaiken, 1987; Chaiken et al., 1989). The basis of heuristic processing is the idea that specific rules, schemata, or heuristics can mediate people's attitudes or

other social judgements. It is believed by Chaiken et al. (1989) that receivers of information sometimes use heuristics in a highly deliberate, self-conscious fashion, but at other times they may use heuristics more spontaneously, in a more mindless way. They may occur simultaneously when the systematic processing is occurring. This is not to say that both modes always occur, only that the two modes can proceed concurrently (Chaiken, 1987; Chaiken et al., 1989).

Heuristic processing depends on whether cognitively available heuristics are activated or accessed from memory (Chaiken et al., 1989). It is assumed that the heuristics employed in the HSM are learned knowledge structures and that they are stored in memory. Like any other knowledge structure, persuasion heuristics can impact on people's attitude judgements only to the extent that they are cognitively available, in other words, stored in memory. These heuristics must then be accessible in the persuasive setting. It is implied that situational factors that influence the temporary accessibility of persuasion heuristics and individual differences in the accessibility of those heuristics should influence the persuasive impact of the heuristic cues (Chaiken et al., 1989).

Persuasion heuristics vary not only in their availability and accessibility; they also vary in their strength or perceived reliability (see Higgins, in press: as cited by Chaiken et al., 1989). While some individuals will

agree with particular heuristics, others may not. Even in the area of agreement, there is discrepancy between the "weight" given to some heuristics over others (Chaiken, 1987; Chaiken et al., 1989). Due to individual difference and situational factors, receivers of persuasive messages will differ in the amount of either processing mode that will occur. If conditions exist that will allow for an individual to process information using solely the heuristic processing (i.e. the individual is unmotivated or unable to process systematically), s/he will evaluate the message via heuristic processing. The persuasive impact of heuristic cues should be maximal in such situations (Chaiken et al., 1989). In contrast, heuristic cues will often exert less persuasive impact in situations where the message recipients are highly motivated and able to process via systematic processing. In these settings, heuristic and systematic processing are assumed to co-occur (Chaiken et al., 1989) The degree to which each processing method influences the complete processing of the message may be considered to be similar to the Kahneman elastic capacity model.

Because systematic and heuristic processing differ in the extensiveness of processing they encourage, the HSM assumes that: (1) systematic processing is more effortful than heuristic processing, and (2) systematic processing both demands and consumes cognitive capacity, whereas heuristic processing makes relatively few capacity demands (Chaiken et

al., 1989). The HSM does not propose a value judgement which places systematic processing above heuristic processing, rather it describes a situation similar to the Kahneman elastic capacity model. The concern driving this assumption is that people are economy minded and wish to satisfy the goal of validity seeking in the most efficient way possible. Message recipients are motivated to hold correct attitudes, but in the interest of efficiency, they may be inclined to avoid systematic processing because of its effortful nature (Chaiken et al., 1989).

In combining the desire for efficiency and minimal effort expenditure with the motivational concern for attaining correct attitudes, the HSM proposes a need for a sufficient level of confidence in defining an individual's attitude. The "sufficiency principle" suggests the idea that efficient information processors must strike a balance between minimizing their processing efforts and maximizing their judgmental confidence (Chaiken et al., 1989). The theory is considered as a judgmental confidence continuum with a reference point representing the person's sufficiency threshold (the criterion point of sufficiency confidence). Confidence levels to the left of the sufficiency point are perceived as insufficient, and levels to the right as more than sufficient. The sufficiency thresholds vary as a function of individual difference and situational factors (Chaiken et al., 1989).

The "sufficiency principle" can be seen as the guiding influence on when the heuristic and systematic processing modes occur. If the sufficiency threshold is high on a particular topic, the need for "more" systematic processing will have a greater impact; while if the sufficiency threshold is lower the need for "more" heuristic processing will be paramount.

C. **Comparison of ELM and HSM**

The ELM and the HSM appear to be models with many similarities. Both models consider and accept that individuals are *not* always active processors of information and offer similar ways of processing information based on that consideration. Both models operate under the initial assumption that individuals desire to hold correct attitudes and opinions and assume similar variables contribute to the process of attitude formation and change. The variables targeted for study, observation, and exploration are considered by both models to play important roles in moderating the process undertaken by individuals in a situation designed to persuade.

The two essential differences between the two models are the considerations of processing modalities (parallel vs. single channel processing) and the role of affect in persuasion. The concern with ELM and its designated <u>mutually exclusive</u> routes to persuasion and information processing has

already been discussed at some length. The HSM has always been considered to represent the condition of parallel processing, *i.e.* both *systematic* and *heuristic* processing occur at any time, differing only in the amount of each at any one time (Chaiken, 1980; Chaiken, Liberman and Eagly, 1989).

The role of *affect* is defined differently by the two models. According to the ELM, affective responses would fall under the peripheral route (Chaiken and Stangor, 1987; see also Appendix A, Figure 2). According to the expectations for the peripheral route to attitude change, *affect* could only result in a temporary change in attitude or behavior and would not be predictive of future behavior. Concerns with this interpretation have already been addressed. The interpretation of the less active route differs under the HSM. HSM classifies *affect* as a component of both the heuristic and the systematic routes with the ability to increase or decrease persuasion via either or both modes.

D. **Targeted Variables**

Through my analysis of the contemporary literature, variables which influenced the cognitive processing of information within both models were apparent. The decision to incorporate the following eight variables was concluded after careful review of the literature and the initial stage (Phase I) of the study, explained in the Methods section to follow.

1. **Presenter Expertise:** In discussing the *Presenter Expertise* variable, it can also be understood as credibility

and trustworthiness. Experiments on the *expertise* aspect of source credibility had an early start in the attitude change literature (McGuire, 1969). Credibility has remained a popular area of research and many studies demonstrated the usual main effects of credibility or expertise on opinion change (Eagly and Himmelfarb, 1978). There is considerable literature showing that the amount of attitude change produced by a given message can be varied by ascribing the messages to sources that differ on such socially desirable dimensions as knowledge, education, intelligence, social status, professional attainment, age, etc. (Hovland, Janis and Kelley, 1953: as cited in McGuire, 1969).

The work done by Petty and Cacioppo on source credibility has resulted in findings similar to those cited by McGuire (1969). Petty and Cacioppo (1981, 1986) have theorized that people are more motivated to think about the arguments given by a highly credible communicator when the proposal is contained in an attempt to derive an educated position on an issue. The highly credible source is seen as a potential source of "correct" information; as such, his/her arguments are perceived as worthy of thoughtful evaluation on the part of the recipient (Stoltenberg and McNeill, 1984). Heesacker, Petty and Cacioppo (1983) have obtained supportive evidence that a highly credible source can increase subjects' message-relevant thinking more than one of low credibility.

The HSM considers the factor of source credibility to act primarily as a heuristic processing cue. Source credibility and source expertise are considered to be associated with the heuristic cue designated by Chaiken et al. (1989), "Expert's statements can be trusted." As a consequence, message recipients may agree more with expert communicators without having fully absorbed the semantic content of the persuasive arguments (Chaiken et al., 1989). According to the HSM literature, as a heuristic cue, source/presenter expertise will accomplish more in situations that are not conducive to a large degree of systematic processing (Chaiken et al., 1989).

The differences between the two models on the influence of *Presenter Expertise* would seem to indicate that there may be more than one way of explaining the effect of this variable with regard to information processing (Petty and Cacioppo, 1986). I expect that *Presenter Expertise* will reflect conditions similar to those found within the assimilation-contrast theory of Sherif and Hovland (1961) discussed previously. It may also be remembered that discussion of the *channel* component of the *Yale Communication Approach* included the concept that the *channel* or medium of a message may have a great impact on persuasive messages. It is in examining *Presenter Expertise* that support for these claims may be found. The presenters of the educational program are peers of the participants and, therefore, may be able to influence

cognitive processing of the information presented in a more heuristic-active mode than might be expected with the ELM. The variable of *Presenter Expertise* as attended to in an educational program may indicate that HSM is a more plausible explanatory model of information processing.

2. **Presenter Likability:** Considered comparable in many ways to *Presenter Expertise*, the variable of *Presenter Likability* also tends to support the concept described by Sherif and Hovland (1961). It seems reasonable to hypothesize that the more the recipient of a message liked the source of a persuasive message, the more he would change his/her beliefs toward the position the source is advocating (McGuire, 1969). McGuire cites numerous studies on behalf of this hypothesis.[3] The proposition that liking the source enhances his/her persuasive valence is a basic prediction of most of the consistency theories of human behavior (McGuire, 1969).

Aspects of the relationship between liking for the source and amount of change in attitudes have also been investigated in connection with reference group theory (McGuire, 1969). An individual belongs to and identifies with a reference group which may or may not have an effect on his/her behavior and attitudes. If the desire to hold correct views is defined as the desire to hold correct views according to a specific

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[3] French and Snyder, 1959; Griffin and Ehrlich, 1963; Horowitz, Lyons and Perlmutter, 1951; Samson and Insko, 1964; Sherwood, 1965; Thrasher, 1954; Wallach, Kogan and Bem, 1962.

reference group, then the factor of source/presenter likability becomes very important.

The ELM considers source likability to act as a peripheral cue to attitude change. There has not been as much research in the area of source likability as the other factors investigated. Manipulations of persuasive situations have included attractive and well-liked celebrity sources in an effort to demonstrate the influence of source cues in persuasion (Petty and Cacioppo, 1986, Petty et al. 1988). These have demonstrated some interaction between well-liked sources of information and persuasion via the peripheral route.

According to the HSM, source likability acts as a heuristic cue and promotes processing via the heuristic mode. The HSM proposes that independent variables (e.g., source factors, such as source likability) indirectly affects yielding to a message's conclusion and, therefore, persuasion via their direct impact on systematic processing. In the heuristic mode, such variables may directly influence the recipient's willingness to accept the message's conclusion without necessarily influencing the acceptance of the arguments (Chaiken, 1980). Message recipients may agree with likable communicators because they may employ the rule that "people generally agree with people they like" (Chaiken et al. 1989, Chaiken, 1980). The acceptance and formation of a heuristic rule may derive from past experiences with others or

may stem from another rule which supports a consistent association between the concepts of liking and interpersonal similarity (Stotland and Canon, 1972: as cited by Chaiken, 1980).

Similar to the expectations with the variable of *Presenter Expertise*, this variable of *Presenter Likability* may have an important effect on the cognitive processing undertaken during the program. Both of the models would view the variable of *Presenter Likability* as influencing the audience via the less active, more peripheral routes. If the effect of the variable of *Presenter Likability* is important to the subjects, support for the HSM will be evident. The measure of the effect of this variable, as with *Presenter Expertise* may also be suggestive of the social comparison model, as well as the assimilation-contrast effect.

3. **Message/Argument Length:** One way that recipients decide whether to accept a communication is to evaluate the argumentation it contains (Eagly and Himmelfarb, 1978). More attitude change research has focused on message variables than on any of the other communication variables (McGuire, 1969). Insko et al. (1976) presented subjects with differing amounts of argumentation and obtained a negative function (as cited by Eagly and Himmelfarb, 1978). The greater the amount of argumentation the less it was accepted and analyzed under certain conditions.

Based upon previous research, Petty and Cacioppo (1986) consider message length directly consistent with message comprehensibility. Petty and Cacioppo's research often examines the relationship between differences in the argument strength and the length of the argument. The longer an argument, the more in depth and stronger it is assumed to be according to the research findings of Petty and Cacioppo(1986). The longer the argument, the greater the impact on information processing, especially undertaken along the central route.

Researchers have identified the heuristic cue "Length implies strength" (Chaiken et al., 1989; Chaiken and Stangor, 1987; Chaiken, Axsom, Liberman and Wilson, 1992, under review). Applied to persuasion, this heuristic reflects the belief that long messages or messages composed of many arguments are more valid than short messages or messages with few arguments (Chaiken et al., 1992, under review).[4] Previous research has shown that long (vs. short) versions of the same message are more persuasive when capacity for systematic processing is not high (Wood et al., 1985: as cited by Chaiken et al., 1992) and that messages containing many (vs. few) arguments are more persuasive when motivation for systematic processing is not high (Petty and Cacioppo, 1984).

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[4] While the HSM incorporates the two factors of message length and message number under one basic heuristic, the ELM interprets the two factors differently. Therefore, this thesis will address each variable separately.

Since both models differ in their expectations for the importance of *Message/Argument Length*, my study expects to witness participants being influenced to different degrees. In the "natural" setting of an educational program, subjects will self-report their interpretations of the length and strength of the arguments presented. Any self reporting may lead to less sterile considerations of the variable described as *Message/Argument Length* than would be expected in the laboratory setting.

4. **Message/Argument Number:** Much of the literature, including the HSM, examines the concepts of message length and message number as similar constructs. The exception is the ELM of Petty and Cacioppo (1986). The ELM considers the number of messages/arguments presented to act primarily as a peripheral cue towards information processing. Message complexity and length are considered to increase central route processing (especially when motivation to process is high), yet if motivation to process is determined to be low, increasing the number of arguments will increase the likelihood of peripheral route processing (Petty and Cacioppo, 1986; Petty et al., 1987). The HSM would consider the variable to effect change via the heuristic "Length implies strength" (Chaiken et al., 1989; Chaiken and Stangor, 1987; Chaiken, Axsom, Liberman and Wilson, 1992, under review).

Since both of the models examined expect similar processing routes to be undertaken, this study would expect

comparable effects for either model in interpretation of the impact of the variable *Message/Argument Number*. As with the variable *Message/Argument Length*, subjects will be petitioned for their self-reported interpretations of the number of arguments presented. Again the less than "sterile" considerations of this variable may deviate from the results that would be expected in the laboratory setting.

5. **Audience Reaction/Consensus:** Previous research on the impact of audience reaction on the persuasibility of message recipients has produced conflicting results (Axsom, Yates and Chaiken, 1987). The concern an individual may have for maintaining a consensus with his/her reference group is a consideration of conformity literature (McGuire, 1969). The initial assumption of the cognitive information processing theories is that an individual wishes to hold correct or valid attitudes (Chaiken et al., 1989; Petty and Cacioppo, 1986; McGuire, 1969, 1985). If the valid or correct attitudes are defined by the reference group, the individual may be more influenced towards conformity than general persuasibility (McGuire, 1969).

In the ELM, the variable of *Audience Reaction/Consensus* is considered and addressed by Postulate VI. While the variable of audience consensus is not fully considered by Petty and Cacioppo, the influence of an individual's reference group biases the processing because the initial group

attitude's become the guiding schema for information processing (Petty and Cacioppo, 1986).

It may be that audience effects typically are heuristically mediated and thus occur primarily when motivation or ability for systematic processing is low (Axsom et al., 1987). That is, individual's tend to be influenced by an overheard audience when using the heuristic cue "if other people think the message is correct (incorrect), then it is probably valid (invalid)". Thus, the audience response cue may directly affect agreement with a speaker's message because it is taken as *prima facie* evidence that the speaker's conclusion is valid (Chaiken, 1987; Axsom et al. 1987).

In consideration of the conformity research, this study would expect to discern a substantial impact for the *Audience Reaction/Consensus* variable. I would expect that, due to the nature of the educational program, the influence of *Audience Reaction/Consensus* may be more important and noticeable than examined in the literature on ELM. The HSM considers the variable to be heuristically motivated influence.

6. **Motivation to Process:** Both the ELM and the HSM hold that *motivation* is a major factor in information processing. The central route to persuasion defined by the ELM hinges on the variable, motivation (Petty and Cacioppo, 1986). An individual must be motivated to process the information presented or that individual will proceed via the peripheral route to persuasion (see Appendix A, Figure 2).

A large component of the motivation to process variable is what Cohen, Stotland and Wolfe (1955) called the "need for cognition", which they described as "a need to structure relevant situations in meaningful, integrated ways. It is a need to understand and make reasonable the experiential world" (as cited by Petty and Cacioppo, 1986). Other early research on this factor suggested that individuals high in the need for cognition were more discriminating and more motivated to think about persuasive communications (Petty and Cacioppo, 1986).

As already discussed, motivation to process also affects the systematic processing that occur under the HSM. Heuristic cues exert a significantly greater persuasive impact when motivation for systematic processing is low than when motivation to process is high (Chaiken et al., 1989; Axsom et al., 1987; Chaiken , 1980; Maheswaran and Chaiken, 1988). Therefore, it suggests that systematic processing is more likely under conditions of high motivation.

According to the similar interpretations of the two models, I would presume that the variable *Motivation to Process* will be observable and important in the cognitive processing that occurs during the educational program. The observed variations in motivation should allow for discussion of the differences in processing methods for individuals low in motivation versus individuals high in motivation. It is anticipated that *Motivation to Process* will be of major

importance for my study's exploration of the two models effectiveness.

7. **Prior Knowledge:** One of the most important variables affecting information processing activity is the extent to which a person has an organized structure of knowledge (schema) concerning an issue (Petty and Cacioppo, 1986). To change an attitude it is generally accepted that another attitude must exist (McGuire, 1969). Hunter, Levine and Sayer (1976) consider a "double comparison" model, which postulates that persons compare their attitudes not only to the attitudes expressed in the message but also to their own attitudes associated with concepts immediately above in their hierarchical structure of concepts (as cited in Eagly and Himmelfarb, 1978).

The general interpretation of the *Prior Knowledge* variable in the ELM is that it affects the individual's ability to process the information presented. The more issue relevant knowledge an individual has, the more that individual tends to be able to counterargue communications opposing their initial positions and to cognitively bolster congruent messages. *Prior Knowledge* produces biased scrutiny of the information presented (Petty and Cacioppo, 1986).

The HSM mirrors the ELM in the desire for an individual to have ability ***as well as*** motivation to process information. It is *Prior Knowledge* (or lack thereof) that may be a factor in determining the degree that a persuasive argument is

examined primarily by the systematic or the heuristic mode (Chaiken et al., 1989). It has been argued that capacity (*Prior Knowledge*) for systematic processing is often lower in real-world settings than in the laboratory persuasion study (Chaiken et al., 1989; Chaiken and Stangor, 1987; Eagly and Chaiken, 1984). If capacity (lack of prior knowledge) is low, individuals may then turn to simple decision rules (heuristics) rather than systematic processing. As described by the HSM interpretation of *Prior Knowledge*, real-world settings may inhibit the amount of systematic processing. In the case of the I.C.A.R.E. educational program, it is my assumption that knowledge about the topic of the program is fairly extensive and, therefore, will *not* inhibit cognitive processing, but rather enhance systematic/central route processing. The topic of date and acquaintance rape education is a current concern in society and there is a great deal of information available to the general public. The observable degree of *Prior Knowledge* evident during the study will be used to examine the route of cognitive processing employed by the subjects. It is expected that the subjects will have a great deal of *Prior Knowledge* and, therefore, will engage in more systematic or central processing.

8. **Issue Involvement/Relevance:** This variable has been examined under many different labels in social psychology.[5]

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[5] "Ego-involvement" (Rhine and Severance, 1970; Sherif, Sherif and Nebergall, 1965), "issue-involvement" (Kiesler, Collins and Miller, 1969), "personal involvement" (Apsler and

Consistent with these varied definitions, *Issue Involvement/Relevance* can be explained as the extent to which an advocacy has "intrinsic importance" (Sherif and Hovland, 1961) or "personal meaning" (Sherif et al., 1973). Issue involvement and personal relevance occurs when people expect the issue "to have significant consequences for their own lives" (Apsler and Sears, 1968: as cited in Petty and Cacioppo, 1986).

As discussed by Sherif and Hovland (1961; Sherif et al., 1965) in the assimilation-contrast theory, involvement affects attitudes via "latitude of acceptance" and "latitude of rejection". Involvement was believed to be associated with a greater probability of message rejection. Individuals were expected to hold expanded "latitudes of rejection" as personal involvement increased, because incoming messages would be more likely to fall within the unacceptable range of a person's attitude continuum (Eagly and Manis, 1966: as cited in Petty and Cacioppo, 1986).

The ELM predict that as personal relevance (and involvement) increases, individuals become more motivated to process the issue relevant arguments presented. As the personal consequences of an advocacy increase, it becomes more important for people to form a veridical opinion because the consequences of being incorrect are greater. Therefore

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Sears, 1968; Sherif, Kelly, Rodgers, Sarup and Tittler, 1973) and "personal involvement" (as cited in Petty and Cacioppo, 1986).

because of the greater consequences, individuals should be more motivated to engage in the active cognitive work necessary to evaluate the true merits of the proposal (Petty and Cacioppo, 1986). It is expected that when a persuasive communication is on a topic of high personal relevance, attitude change will be governed mostly by thoughtful consideration of the issue relevant arguments presented (central route). On the other hand, when a message is on a topic of low personal relevance, it is expected that the peripheral features of the persuasion situation would be more potent (Petty, Cacioppo and Goldman, 1981). Empirical research gathered by Cialdini et al. (1976) (as cited in Petty et al. 1979, Petty et al. 1986, Petty and Cacioppo 1979, 1984) supports an interpretation of this type.

The general interpretation of issue involvement and relevance for the HSM is similar to that of the ELM. Subjects that are determined to be high in personal involvement are expected to employ the systematic processing mode to a greater degree than the heuristic mode (Chaiken et al., 1989). However, the HSM, while supporting some of the research above, also considers the factor of issue involvement and personal relevance to encourage *selective* heuristic processing in some cases. Rather than solely concentrating on the systematic processing of the issue relevant messages, research on health messages and fear appeals suggests that people defensively reject highly relevant messages (Liberman and Chaiken, 1992,

in press). Concentrating on *selective* heuristic cues individuals may reject highly relevant messages rather than systematically processing the arguments presented (Jepson and Chaiken, 1990). Again there is support for the concept of the HSM as a parallel processing model, because both processing modes may occur at the same time.

Both of the models concentrate extensively on the variable *Issue Involvement/Relevance*. According to the models' interpretation, subjects who demonstrate a high level of issue involvement or personal relevance will actively engage in cognitive processing of the information. The converse is also expected. It is anticipated that individual levels of issue involvement and personal relevance will be estimated and the differences presumed by the models will be manifest in this study.

IV. **Methodological Gap in the Literature**

All of the literature examined, explored information processing in an experimental setting. In previous examinations of the ELM and the HSM, the targeted variables were manipulated to control for each variable at a specific instance. If the informational or persuasive setting is always going to be in a laboratory situation, the experimental methods thus far described is not only possible, but preferable. It not only allows for examination of variables, but analysis of the extent to which the variable affected the

persuasion and information processing (Stiff, 1987; Stiff and Bolster, 1987; Johnson and Eagly, 1989: as cited in Mongeau and Stiff, 1991, in press).

Educational programs do not occur in a laboratory setting and do not easily allow for the manipulations of the variables influencing information processing. In an effort to accurately and effectively assist in the evaluation of the information processing that occurs during educational programs, observations and interviews permit a more complete measurement and evaluation. By having individuals describe what occurred for them while participating in an educational program, it is possible to complete a more comprehensive evaluation of which factors were the most important in conveying the information and inducing persuasion.

V. **Methods**

To explore the question of how individuals process information, I will consider the educational program regarding date and acquaintance rape awareness as presented by the I.C.A.R.E.(Individuals Concerned About Rape Everywhere) group on the Lehigh University campus. The program presents participants with information concerning awareness of date and acquaintance rape on college campuses and promotes communication and awareness in an effort to change attitudes on this issue.

A. **Subjects**

The subjects chosen to participate in the interview portion of the study were selected by two different methods. The subjects interviewed from the first half of the 1993 spring semester's programs were volunteers recruited by the researcher immediately following the program. Due to the anticipated problems of "volunteerism" and "expectancy" biases, during the second half of the semester's programs the subjects were selected in a different manner. In the second half of the semester, individuals were randomly chosen by the researcher based on selecting at least a 20 percent sample from the total number of participants observing the I.C.A.R.E program. I chose one in every five participants. Immediately following the completion of the program, I approached these individuals and asked if they would be willing to take part in my study. Along with these subjects, a certain portion of the audience also presented themselves as volunteers who were willing to assist in the study. These combined recruitment strategies enabled me to interview 22 percent of the population participating in the 1993 spring semester I.C.A.R.E. programs.

B. **Procedure**

The study was conducted in two phases. During the fall semester of 1992 (Phase 1), the targeted variables were identified by means of a thorough review of the literature and these variables were incorporated into the on-going I.C.A.R.E.

program evaluations. The observations and interviews for the study then commenced during the spring semester of 1993 (Phase 2).

The variables determined to be of importance from the review of the literature were included as components of the general I.C.A.R.E. program evaluations early in the 1992 fall semester (see Appendix B). Each of the questions on the program evaluation are related to at least one of the targeted variables.

The evaluation questions included items concerned with the targeted variables: *Presenter Expertise* (questions 1 and 2), *Presenter Likability* (question 3), *Message/Argument Length* (question 4), *Message/Argument Number* (question 5), *Audience Reaction/Consensus* (question 7), *Motivation to Process* (question 9), *Prior Knowledge* (question 10), *Issue Involvement/Relevance* (questions 6, 8, and 11). An independent test was conducted in the early 1992 fall semester, in which the evaluation forms were introduced following an I.C.A.R.E. program and individuals were interviewed to assess the interpretability and clarity of the questions. The participants interviewed completely understood the questions and comprehended what the questions were meant to evaluate, providing support for the validity of the evaluation questions.

Throughout the 1992 fall semester, participants in the I.C.A.R.E. program completed the evaluations following

participation in the program. From these evaluations a data base was established and an item analysis was conducted that helped to formulate the "In-depth Interview Format" and the questions used in the observatory and interview stage during the 1993 spring semester, Phase 2 (see Appendix B). The questions contained in the "In-depth Interview Format" concentrated on the eight variables previously identified in the literature review and discussed earlier in this thesis.

During Phase 2 of the study, observations and interviews were conducted during and immediately following I.C.A.R.E. programs in the 1993 spring semester. In order to establish credibility for my attendance and participation in these programs, I introduced the program and discussed my research briefly at the beginning of the sessions.[6] I explained to the participants that I would not be actively taking part or contributing to the program, but solely observing the proceedings. I also explained that I would be approaching some of the participants immediately following the program to ask them to participate in the study.

While observing the program, I usually positioned myself to the periphery of the room and quietly observed the participants and the interactions between participants and with the facilitators of the program. In an effort to refrain from inhibiting the natural interactions within the audience,

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[6] I am a former presenter/facilitator of the I.C.A.R.E. program and have been the coordinator of the program for the last two academic years (1991-1993).

I did not take place in the discussions, nor did I take notes too conspicuously. I felt that any contribution that I made to the discussion at hand would influence the direction of the audience interaction. As well, I did not want the audience to think I was transcribing every word and comment made during the program, as it might influence what was expressed aloud by members of the audience during the more interactive parts of the program.

In noting the different reactions (*Audience Reaction/Consensus*) to the materials presented, differences in *Motivation to Process*, *Prior Knowledge* and *Issue Involvement/Relevance* were evident. All observations made during the course of the educational program were concisely noted into a tape recorder while those individuals to be interviewed were completing the I.C.A.R.E. program evaluations, as well as preparing the relevant parts of the "Informed Consent Forms" (see Appendix B). These brief notes were expanded upon following the interview sessions.

The interviews were conducted immediately following the completion of the I.C.A.R.E. program. The interviews were conducted in an informal manner within a group format. While ideally the interviews should have been conducted on a one-to-one basis, constraints on time and subjects availability made informal group interviews more accessible. In an effort to make the interview process consume as little time out of the subjects' busy lives as possible, the content of the

interviews were recorded by the researcher, only after all of the subjects agreed. The tapes of the interviews were then transcribed by the researcher along with the notes on the observations of the program atmosphere. There is nothing on either the tapes or the transcriptions which would indicate or identify any individual out of the population, therefore, the subjects' confidentiality has been preserved.

The interviews were unconstrained as to the direction or focus of the conversations. While the "In-depth Interview Format" was the initial basis of the discussion, the direction of the elaboration was left to the groups discretion, with only nominal guidance by the interviewer. The free exchange of interpretations allowed for the researcher to explore naturally the process the subjects progressed through during the educational program. While concern for the problems inherent in group interview sessions, e.g. group conformity and expectancy biases, were very real possibilities, the group's varied and open discussions indicated to the interviewer honest and mindful responses which demonstrated varying degrees of processing.

By conducting the research for this study in an ethnographic manner, I looked specifically at how individuals presented with information reacted to the information and interviewed subjects to determine what cognitively (or maybe *not* cognitively) occurred during the process. By examining what participants in an educational program identified as most

important to them, the structure of these programs can be altered to encourage more efficient processing of information. The subjects were asked a question in the interview session regarding their attention to specific variables, as well as their personal perception of the importance of the different variables. The variables were measured with respect to what degree the subjects attended to them, as well as, the relative importance of the specific variables to the information processing which occurred. A relationship between these measurements was tested for significance by the use of the Chi-square statistic. The measurements on the variables were dichotomous, not continuous, and therefore, allowed for the reliance in this study on the Chi-square and its probability.

VI. Setting the Scene

Observations

This section of the study discusses the qualitative observations conducted during the I.C.A.R.E. presentations which occurred throughout the 1993 Spring semester at Lehigh University. In conducting the observations, I positioned myself to one side of the room in which the program was occurring. This enabled me to observe the majority of the audience throughout the program. The situations observed, as well as the interviews which followed, seemed to lend some measure of support for the HSM and the idea that systematic and heuristic processing was occurring at the same time.

I observed all of the 1993 Spring semester I.C.A.R.E. programs and compiled field notes about the settings and situational factors found at each program as well as the audience interactions during and succeeding the programs. These situations offered evidence concerning the four primarily important variables: (1) *Audience Reaction/Consensus*, (2) *Motivation to Process*, (3) *Prior Knowledge*, and (4) *Issue Involvement/Relevance*. Support for the impact of *affect* was also evident in both the observations and interviews conducted. It is not surprising to note that the differences in attitudes expressed concerning rape education and awareness in this study varied along gender lines. What is interesting to note, is that the educational program seemed to induce information processing in similar ways regardless of their position of the topic and the information.

1. **Settings and Situational Factors:** All of the programs, with one exception, took place in fraternity houses. The audience was comprised of members of that fraternity and an invited sorority. The male to female ratio of these programs were roughly equal, though occasionally there were more female audience members than male members (despite the fact that the males were in their "house"). This may be due to the nature of the educational program being about rape and rape awareness. The men may consider the program to be of more concern for women than for themselves. Also to be

considered is the fact that on the average, sorority membership is numerically larger than fraternity membership.

The audiences were mixed with regard to class distribution. The membership of the audiences were comprised primarily of underclassmen.[7] The predominance of underclass students is probably due to the fact that sororities and fraternities involved made attendance to the program mandatory for the pledges of the "houses". Another factor may be that upperclassmen probably had already been exposed to this educational program at some other point in their university careers.

The settings varied among the different programs. The majority of the programs took place in the common living area of the host fraternity, with one notable exception. One of the programs observed took place in the large open barroom of the host fraternity. In the majority of the observed programs, the setting was suitable with adequate and fairly comfortable seating for the audience. In the former instance, the setting was uncomfortable and provided poor seating arrangements.

The seating arrangements during the programs were interesting to observe. The men divided themselves into two sections. The men sat in either the front of the audience or the very rear of the audience. This would seem to indicate

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[7] By this designation, "underclassmen" refers to freshmen and sophomores and "upperclassmen" refers to juniors and seniors.

the degree of motivation to attend the program, however, later interviews did not confirm assumption. Individuals chosen for interviews from both the front and the rear of the audience displayed similar degrees of motivation to attend the program.

The women by default sat in the middle of the audience since the men had usually claimed their respective seats before the women arrived. The seating arrangement had the advantage of removing any chance of a strictly bipolar gender-based debate from occurring, this also produced an interesting setting. The seating arrangement had the effect of making the women involved in the discussion engage in debates and react to statements from the front and back. The arrangement appeared to intimidate many of the women during the program as demonstrated by the fact that some female subjects interviewed did not vocalize much during the program, but in the smaller interview groups were demonstrably more vocal.

In about half of the programs observed, the large numbers of individuals in the audience made it difficult to facilitate the program. The presenters had difficulty in controlling the "side" conversations and some of the information presented may not have been heard by the entire audience. On the other hand, certain interactive parts of the program were attended to by the entire audience, as well as some of the lecture-based segments of the program which were stressed by the facilitators. Of greater interest than the

setting and situational factors were the interactions within the audience during the program.

2. **Audience Interaction:** There was not a great deal of interaction between the members of the fraternities and the sororities before the programs. This may be due to the general trend of the sorority members arriving later for the programs. Following the program there was a greater amount of "friendly" interaction between the groups, with quite a bit of discussion about the program.

The interactions, discussions and debates that occurred during the course of the program were of two types: those that occurred between audience members and the facilitators of the program, and those that developed within the audience itself. The presenter teams facilitating the programs are always composed of at least one male and one female so that the audience would not feel that the issue is only a concern for one gender. This fact did not prohibit the audience from arguing with the presenters on gender-related issues.

The scope of the interaction between the presenters and the audience focused on separate issues. The males were concerned with legality and possible repercussions of any activity they might be involved in with individuals of the opposite sex, while the females were concerned with the issue of date and acquaintance rape and the implications for their own safety. The majority of the males in the audiences

indicated that their motivation to process the information regarding the topic focused on receiving reassurances that they were not going to become victims of "false" reporting of rape. The women in the audiences were more concerned about themselves being victims of the crime and wanted to discuss the issue in an effort to understand their own vulnerability.

The difference in focus on the issue presented between males and females was the basis for much of the interaction between the audience and the presenters and also acted as the catalyst for the debates within the audience. The interactive nature of the program targeted the difference in focus and encouraged interaction within audiences. The program was set up so that discussion and debates are encouraged between individuals with differing opinions.

As noted, the women were in an awkward situation seated as they were between two groups of men. They also had to contend with being in the "house" of the host fraternity. The potentially intimidating environment did not prevent some of the women from debating with the men about the issues presented. The interaction between males and females focused on different concepts on the issue of responsibility. The presenters attempted to create a fairly interactive atmosphere in order to direct discussion. Polarization generally occurred along gender lines. The discussions tended to be general group discussions with the different perspectives supporting their interpretations as the conversation

continued. While the educational program presented the audience with facts, definitions, and concrete information, the audience directed the program into focusing on differing opinions and views on the issue. In the observations and discussion during the interviews, the difference in focus regarding the presentation influenced the evaluation of the targeted variables. The males had a narrower, specific self-interest regarding the topic, while the females had a more general broad interest and concern about the presentation. This distinction was manifest in consideration of the variables examined by the study.

VII. Results and Discussion

What an individual pays attention to should be an indication of how that individual is processing the information presented to him/her (Petty et al. 1988, 1991). An individual who holds attitudes favorable to the information presented would be more likely to undertake processing via a systematic/central route, whereas an individual who holds unfavorable attitudes would process information via a heuristic/peripheral route. According to the ELM, the processing of information would occur either via central or peripheral routes (mutually exclusive), while the HSM would consider both systematic and heuristic routes to be involved (parallel routes). The HSM contends that the individual involved may be influenced by one of the paths to

a greater degree, but both routes are always involved. The targeted variables identified in both models will be examined to determine their contribution to the information processing that occurs during the I.C.A.R.E. program.

One element that is targeted within this project is the role of *affect*. The literature indicates that *affect* may change the way in which information is processed regarding the change or affirmation of previously held attitudes (McGuire, 1985; Wu and Shaffer, 1987; Chaiken and Stangor, 1987). The ELM places *affect* as a component of the peripheral route and considers it of relatively little importance, while the HSM considers it as a part of both the systematic and heuristic paths and relatively important dependent upon the context of the information presented. If the ELM is correct, variables associated with *affect* should not be found at the same time or to the same degree of importance as the other variables associated with central route processing. The interviews were structured to examine the targeted variables and the role of *affect* within each of the models.

The interview sessions were conducted immediately following the conclusion of the programs, in small groups and taped (with the interviewer transcribing the tapes at a later date). The interviews followed in a general way the outline found in Appendix B, entitled "In-Depth Interview Format". The questions posed to the group were concerned with specific targeted variables and the perception of the variables'

relative importance, but the group was not restricted in what they could discuss. It was obvious that certain variables were particularly important to the subjects. These will be discussed in depth later in this paper.

The small interview groups were divided equally by gender (males: N=18, females: N=19) and represented approximately 22 percent of the population attending educational programs this semester. The subjects were randomly chosen according to the procedure indicated in the Methods section of the paper. In general, 62 percent (N=23) of the subjects indicated that they had actively thought about the information they had received when they were asked a question regarding their level of cognitive processing. The focus of the subjects' attention differed along the gender distribution as noted in the Observations section. Seventy percent (N=26) of the subjects' considered the information important enough that it should be cognitively processed. There was no statistical significance between the subjects perceived amount of cognitive processing (thinking about the program) and the perceived importance of the message ($X^2=2.222$, $p>.10$).

Two questions were asked concerning the variable, *Presenter Expertise*. In general, 76 percent (N=28) of the subjects agreed that the presenters were credible. There was no significance in the relationship between *Presenter Expertise* and its perceived importance to information processing ($X^2=1.498$, $p>.20$). The discussions displayed this

trend. The subjects did not considered *Presenter Expertise* an issue of importance. There was no elaboration, discussion or essential disagreement about the perceived importance or the perception of the presenters credibility.

Presenter Likability was more an issue for debate than *Presenter Expertise*. Approximately 57 percent (N=21) of the subjects considered the presenters likable, while the remainder of the sample varied in their interpretation of the presenters likability. There was no statistically significant relationship between *Presenter Likability* and the observed importance of *Presenter Likability* during processing ($X^2=0.719$, $p>.30$). The observed debate fell along the same lines evidenced during the interactions between the audience and the presenters noted in the Observations. The comments focused on the fact that the presenters did not take sides during the discussion. The comments included: "I didn't know where the presenters stood...I mean were they just taking a position to cause discussion or what?" and "The presenters never told us what the right answer on the issues was".

Questions considering the length of the program and the number of "informational" arguments presented, *Message/Argument Length* and *Message/Argument Number,* were asked. Seventy-eight percent (N=29) of the subjects disagreed that the amount of material covered (*Message/Argument Number*) was too extensive. The relationship between *Message/Argument Number* and its importance to information processing was

significant (X^2= *13.244, p<.001*). The individuals who considered *Message/Argument Number* to be important to information processing, almost entirely responded that the amount of information was not too considerable.

Sixty-eight percent (N=25) of the subjects agreed that the program was not too long (*Message/Argument Length*). There was no statistical significance between *Message/Argument Length* and the person's perception of the importance of information processing (X^2=*0.573, p>.30*). During the interviews, there was one notable exception to the idea that the program that was not too long. This exception occurred for the program situated in the fraternity barroom. The uncomfortable atmosphere of this program may have influenced the participants, since more people said the program was too long. (It should be noted that the program lasted no longer than any other program, and was in actuality shorter in duration than many of the others.) This incident supports the argument that the environment has much to do with the process of persuasion and information processing.

A. **Targeted Variables of Significance**

1. **Audience Reaction/Consensus:** The targeted variable *Audience Reaction/Consensus* emerged as very important to the subjects of this study. Eighty-seven percent (N=32) of the subject thought that the opinions and viewpoints expressed by the audience were more important than the viewpoints and opinions of the program facilitators. It was considered to be

the *most* important factor by many of the subjects (48%, N=18). The test of the relationship between *Audience Reaction/Consensus* and the importance of this variable was significant ($X^2=13.960$, $p<.001$). The trend of this relationship was that if a subject considered *Audience Reaction/Consensus* important s/he would pay attention to the discussion of the audience. The majority of the participants listened to the *Audience Reaction/Consensus*, regardless of their perception of its importance.

Table 1: Relationship of *Audience Reaction/Consensus* and Importance to Processing

-Number -Row% -Column% $X^2=13.960$, $p<.001$	Variable **Important** to Information Processing	Variable **Not Important** to Information Processing
Audience Reaction/Consensus **Important**	18 56% 90%	14 44% 82%
Audience Reaction/Consensus **Important**	2 40% 10%	3 60% 18%

While agreement existed as to the extreme importance of *Audience Reaction/Consensus* at least within the interviews, the subjects responded with a variety of reasons about the importance of audience consensus. These included: "These are my friends" (N=25), "The people here are like me and have similar outlooks" (N=13), "The people I am friends with have the same feelings as I do" (N=7), "Some of the audience members had personal experiences that made sense with what

they were saying" (N=11), and "I could tell that meant a lot to <Name> so it is important to me" (N=8).[8]

The greatest concern for many of the subjects was the opinions and attitudes of their reference groups. A great deal of the interactive segments of the programs were spent in achieving some measure of consensus with those individuals seated in their immediate surroundings. A majority of the participants took positions that were relative and similar to that of their peers and friends. During the interactive continuum section of the program, it was my observation that the majority of the participants did not take an extreme position unless it was supported by others.

During the interviews, the full effect of *Audience Consensus/Reaction* was explored. A great deal of conformity was displayed and much of the concern for others seemed to be *affective* in nature. The discussion within the smaller group interviews exposed the varying degree to which the participants were involved in classic conformity and social comparison. The overwhelming majority of the subjects, 87 percent (N=32) used the audience as a reference group from which to assess their attitudes concerning the issues presented. The trend towards conformity and social comparison

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[8] Many of these responses were given by the same persons during the interviews. The numbers indicate how many subjects either responded with statements similar to these quoted or indicated agreement with the statements.

will be addressed further in the General Implications for Further Research section of this paper.

The ELM does not consider *Audience Reaction/Consensus* to be of great importance to cognitive information processing or in determining which route to persuasion and information processing will occur. Rather, this variable will determine whether the processing occurring is biased or objective, with the implication being that biased processing is more peripheral in nature and objective processing is more central. The HSM considers *Audience Consensus/Reaction* to work in the heuristic processing mode. The difference between the models on this variable, is that HSM considers it very important to processing, though in an heuristic way (Chaiken, 1980; Eagly and Chaiken, 1984; Eagly and Himmelfarb, 1978). The results from this study indicate that this variable was more important than I had expected. The impact of *Audience Consensus/Reaction* was statistically significant. The subjects indicated in the interviews that they concentrated primarily on social comparison heuristic cues when dealing with the information presented. The importance granted *Audience Reaction/Consensus* by the subjects in my study lends support for the HSM's interpretation of its value to information processing.

2. **Motivation to Process:** *Motivation to Process* was specifically addressed by a question during the interviews. There was a divergence along gender lines in the

level of *motivation*, as noted in the Observations. While 65 percent (N=24) of the subjects interviewed believed themselves to be high in *Motivation to Process*, women tended to be higher in motivation to attend (74%, N=14/19) than men (56%, N=10/18). In the initial examination of this difference, it seemed that it might be an important distinction, but there was no statistical significance with regards to gender and *Motivation to Process* (X^2=*1.905, p>.10*).

Table 2: Relationship of Gender to *Motivation to Process*

-Number -Row% -Column% X^2=*1.905, p>.10*	**High** in *Motivation to Process*	**Low** in *Motivation to Process*
Females	14 74% 58%	5 26% 38%
Males	10 56% 42%	8 44% 62%

In most of the studies examining these models, the variable *Motivation to Process* is usually manipulated and controlled for in order to determine the actual effect of the variable on the cognitive processing of information. In my study, the subjects were allowed to self-report their own levels of *Motivation to Process*. Along with the self-reported importance of this variable, the observations of the program assisted in determining the subjects position relative to this variable.

The impact of *Motivation to Process* is difficult to isolate in the "natural" setting because of its seemingly strong association with *Issue Involvement/Relevance*. It seemed to the researcher that those individuals who could be designated "low" in *Motivation to Process* also tended to be identified as "low" in *Issue Involvement/Relevance*. The interaction effect of these two variables with be discussed later in this paper.

Whether a subject was "high" or "low" in *Motivation to Process* was clear during the observation stage of the program by the manner in which the subject attended to the presentation. The degree to which a participant was *motivated* did not seem to affect his/her processing of information beyond the gender differences in the focus about the program. While all of the subjects interviewed underwent similar processes, individuals who could be designated as "low" in *motivation* had a narrower focus about the program. Their focus in the program usually revolved around examining specific instances, examples or legal concerns directly related to their own well-being. Rather than any demonstrable concern for the general problem discussed, subjects "low" in *motivation* were focused on self-interest with regard to the issue presented.

The ELM and the HSM both consider *Motivation to Process* to have an impact primarily on the central or systematic processing ability of the subjects. In my study,

the variable of *Motivation to Process* concentrated on differences in focus about the issue. The importance of this variable may have directed subjects towards the more active course of processing, but unlike the interpretation of the ELM, *Motivation to Process* was similar in importance to some of the heuristic variables and did not determine the direction of processing as the primary variable.

3. **Prior Knowledge:** This variable had an effect that was not predicted by either model. According to the research, it is expected that individuals who have *Prior Knowledge* about an issue will be able to cognitively process information rather than if the knowledge is lacking. Lack of prior knowledge is supposed to direct an individual towards the heuristic/peripheral routes to information processing.

A minority of the subjects (14%, N=5) admitted to learning entirely **new** information, but this may be the result of the majority of the individuals having already been exposed to the educational program at some time previously in their university careers (86%, N=32). The relationship between *Prior Knowledge* and the importance with regard to information processing was significant ($X^2=3.887$, $p=.05$). The results of this relationship are displayed in Table 3, below. The subjects who received "new" information considered that information to be important, as did the 59 percent of the subjects who had *Prior Knowledge* about this information.

Table 3: Relationship of *Prior Knowledge* and Importance to Processing

-Number -Row% -Column% $X^2=3.887$, $p=.05$	Variable **Important** to Information Processing	Variable **Not Important** to Information Processing
Subject had *Prior Knowledge*	19 59% 79%	13 41% 100%
Subjects had **no** *Prior Knowledge*	5 100% 21%	0 0% 0%

The majority of the "new" information regarded the finding that other individuals hold differing viewpoints about the issue of date and acquaintance rape. The expressing of different attitudes about the issue presented by the educational program often resulted in affective responses to the situation. Frequently the question "Do you guys (men and women) really think/concern yourselves with that?" was posed from at least one of the subjects in the group. The finding that existing attitudes differed from their own acted as *affective* information concerning the program and the situations discussed for much of the audience.

Subjects who had participated in this educational program at a previous occasion in their college career, were less influenced by the different attitudes expressed. The fact that other attitudes about rape and rape awareness exist did not come as a surprise to these subjects. Those subjects who had not been exposed to different attitudes about this

issue were more affected and increased their processing substantially, as evidenced in the interaction during the program and the discussion afterwards.

The models both hold that individuals who have *Prior Knowledge* about an issue will engage in further cognitive processing because they are in a better position to evaluate the arguments. While this was supported because of the debates which occurred between students who had been exposed to this information previously, those subjects that were presented with "new" opinions and attitudes increased the cognitive processing that they commenced. This was probably an effort to evaluate the new information with regard to their existing attitudes.

4. **Issue Involvement/Relevance:** As previously noted, *Issue Involvement/Relevance* is often conceptually linked to the variable *Motivation to Process*. A majority of the participants considered this program to be of great personal relevance to themselves (63%, N=23). The two variables *Motivation to Process* and *Issue Involvement/Relevance* were difficult to examine because they each appear to influence the other. The relationship between them was not statistically significant ($X^2=2.011$, $p>.10$). The displayed results in Table 4, indicate that the majority of the subjects measured "high" in both *Motivation to Process* and *Issue Involvement/Relevance*, but those individuals "low" in

Issue Involvement/Relevance were split on *Motivation to Process*.

Table 4: Relationship of *Issue Involvement/Relevance* to *Motivation to Process*

-Number -Row% -Column% X^2=2.011, p>.10	**High** in *Motivation to Process*	**Low** in *Motivation to Process*
High in *Issue Involvement/ Relevance*	17 74% 71%	6 26% 46%
Low in *Issue Involvement/ Relevance*	7 50% 29%	7 50% 54%

This surprising result may be the consequence of the method of measurement used in the study. There was no direct measure of either *Issue Involvement* or *Motivation*; the study is based on self-reported levels of these variables. Those subjects "low" in *Issue Involvement* and *Motivation* had a narrow focus on specific issues that were especially of self-interest.

The 46 percent of the subjects (N=17) who were "high" in both of these variables displayed a great concern for the issue and information on both a personal as well as a general level. These subjects are concerned about the topic as being of great general importance for everyone, while the subjects designated as "low" are concerned primarily about self-interest. Those individuals that were "high" in one and

"low" in the other (N=13), explained there position as the result of either distractions from outside the confines of the program (e.g. a test the next day, etc.), or the issue was just not relevant to them though they wanted to attend because all of their friends were there.

As with the variable *Motivation to Process*, *Issue Involvement/Relevance* is considered by both models to enhance processing along the more active routes. Similar to the variable, *Motivation to Process*, the results found in this study regarding *Issue Involvement/Relevance* indicate that this variable could **not** direct the process towards primarily a cognitive route as would be expected by the ELM and, therefore, the HSM would seem to be of greater value in investigating information processing.

B. **Role of Affect**

Affectively-linked information was presented during two separate sections of the program. The discussion and interaction segment of the program relied to a great deal on participants contributing personal insights. The discussion was directed by questions for which there was no "right" answer and were estimated to provide *affective* information. The other portion of the program that explored the issue via *affectively-linked* information, was the statistics section. The statistics, factual, were presented in combination with *affective* testimony.

Two of the targeted variables were associated with *affect*. First, *Prior Knowledge* consisted of opinions and emotionally backed statements which were assessed during the program and the interviews. *Audience Reaction/Consensus* was considered primarily *affective* because the subjects reacted to discussion that was regarded as personal in nature.

It was during the discussions that the role of *affect* was established as significant. Ninety-one percent of the subjects (N=34) considered two sections of the program as of particular importance: the statistics section (N=10) and the discussion portion (N=24) of the program. These two sections of the program were found to be statistically significant in relation to the targeted variables most influenced by *affect, Prior Knowledge* and *Audience Reaction/Consensus*. The information presented in Tables 5-8, below illustrates the trends of the influence manifested in these situations.

Table 5: Relationship of Statistics to *Prior Knowledge*

-Number -Row% -Column% X^2=12.641, p<.001	**High** in *Prior Knowledge*	**Low** in *Prior Knowledge*
Statistics Section Most Interesting	6 60% 19%	4 40% 80%
Statistics Section Least Interesting	26 96% 81%	1 4% 20%

Table 6: Relationship of Discussion to *Prior Knowledge*

-Number -Row% -Column % X^2=3.887, p=.05	**High** in *Prior Knowledge*	**Low** in *Prior Knowledge*
Discussion Section Most Interesting	23 96% 72%	1 4% 20%
Discussion Section Least Interesting	9 69% 28%	4 31% 80%

The Tables 5 and 6 presented above, consider the responses regarding **high** and **low** *Prior Knowledge* with regard to the two most *affectively* salient sections of the program: the Statistics and the Discussion sections. The trend displayed in Table 5, indicates that high *Prior Knowledge* influenced people to consider the statistics as least interesting and in Table 6, the discussion section was the most important. The low numbers in the sample may be responsible for these findings and the statistically significant relationship.

Below are Tables 7 and 8 which examine the relationships of **high** and **low** attention to *Audience Reaction/Consensus* with regard to the Statistics and Discussion sections. The trend displayed in Tables 7 and 8 was similar. Those participants that considered the *Audience Reaction/Consensus* as important, tended to consider the discussion section as the most important and the statistics

section to be the least important. Again, due to the small sample size, the significance may be affected.

Table 7: Relationship of Statistics to *Audience Reaction/Consensus*

-Number -Row% -Column% X^2=22.473, p<.001	**High** in *Audience Reaction/Consensus*	**Low** in *Audience Reaction/Consensus*
Statistics Section Most Interesting	5 50% 16%	5 50% 100%
Statistics Section Least Interesting	27 100% 84%	0 0% 0%

Table 8: Relationship of Discussion to *Audience Reaction/Consensus*

-Number -Row% -Column% X^2=8.747, p<.01	**High** in *Audience Reaction/Consensus*	**Low** in *Audience Reaction/Consensus*
Discussion Section Most Interesting	24 100% 75%	0 0% 0%
Discussion Section Least Interesting	8 62% 25%	5 38% 100%

A question was introduced that was concerned with any proposed changes the subjects would like to see in the program. While the majority of the individuals (78%, N=29) did not recommend any changes, a portion of the subjects (22%, N=8) requested more affective information. At some point in

the discussion 70 percent of the sample indicated that *affect* was important. They discussed the idea that the *affective* statistics and the personally relevant and emotional stories related by others in the audience made them think about the issue more and brought home the message of the program most effectively for them, however, this relationship was not statistically significant ($X^2=3.311$, $p>.05$).

As noted, *Audience Consensus/Reaction* and *Prior Knowledge* were affectively concerned, as well as being an important part of the information processing. The subjects in this study considered the information that was emotional in nature (i.e. personal stories, emotionally linked statistics, etc.) an important force in how they evaluated the program. Respondents consistently indicated that the *affective* information was of great importance in their processing of the material. This may be the result of the topic of this educational program, but the fact that the majority of the subjects relied on *affective* information in forming or evaluating their attitudes and opinions indicates that *affect* must play an important part in our decision making process.

In the discussions, 59 percent (N=22) of the conversations revolved around personal experiences and emotionally linked statistics. This relationship was significant ($X^2=11.062$, $p<.001$).

Table 9: Role of *Affect* - Relation of Processing *Affect* to Importance

-Number -Row% -Column% X^2=11.062, p<.001	*Affect* is Important to Information Processing	*Affect* **not** Important to Information Processing
Considered *Affective* Argument	20 91% 77%	2 9% 18%
Did not Consider *Affective* Argument	6 40% 23%	9 60% 82%

Table 9 displays the trend that these subjects who considered *affect* important used it in processing the information, while those individuals who did not consider *affect* important did not utilize it in the information processing. This trend may result from the fact that these measures were self-reported because objective measurement of the role of *affect* on decision making is nearly impossible.

My interpretation of the observations and the interviews leads me to believe that the audience visibly reacted to certain statistics that contained an emotional appeal and it was obvious that any recounting of personal experiences caused a distinct reaction in the audience. The impact of *affect* is not easily measured, yet the result of exposure to emotionally charged information is evident. People listen to personal stories and *have* to process the information, if only to remove themselves from possible inclusion in that type of situation. Obviously, *affect* is a

powerful tool in persuasion and information processing which needs further study.

The *Role of Affect* is considered by the ELM to influence change via the peripheral route. According to the model, *affect* would be of little consequence if an individual was involved in processing information via the central (more cognitive) route. The importance expressed for the *Role of Affect* by the subjects of this study would seem to indicate that it plays a greater role than would be expected by the ELM. The discussion related to the issue presented and *affect* may have allowed for **more** cognitive processing due to the importance and emphasis given the *affective* information. This study has found that subjects addressed the issue presented in the educational program in both central/systematic and peripheral/heuristic routes, especially with regard to *affect*. This supports the importance of the HSM as a preferable cognitive approach to information processing.

VIII. Summary and Final Remarks

The data gathered in this study provides more support for the HSM, in comparison to the ELM, as a comprehensive model of information processing. The most significant variables identified by the subjects interviewed emphasize the importance of both routes to persuasion and cognitive information processing. The subjects indicated consideration of both heuristics, as well as systematic cognitions.

The subjects did not appear to consciously choose either a central or peripheral route in processing the information presented during the educational program nor did they consider variables that were identified primarily with solely one route. Instead, they seemed to use both cues and cognitions in differing levels in determining their attitudes and opinions throughout the program. This supports a parallel approach in which a more cognitive method may be prevalent, yet a simple cue decision making strategy also may be employed. Both occurred in subject's processing during this study, although in different degrees. While actively thinking about the information presented (cognitive processing), especially if it was new information, simple heuristic cues were used in social comparison and conformity inducing situations.

The variables determined to be significant in this study contributed to different processing paths in the ELM and HSM. The variables of *Motivation to Process* and *Issue Involvement/Relevance* are identified as having primary importance for more central processing in both models. The variable identified as *Prior Knowledge* was more important to the central route for the ELM and both the heuristic and the systematic routes of the HSM. *Audience Consensus/Reaction* has been predominately associated with the HSM and the heuristic route of information processing. The role of *Affect* is

considered by the ELM to contribute to the peripheral route and in the HSM as a component of either route.

The process explored by the subjects in this study involved an inordinant amount of influence produced by *affect*. This influence was cognitively processed by the majority of the subjects. There were probably some participants who were not affected by the emotional recounts and statistics, but the subjects within the interview sessions universally attended to the *affective* components of the presentation. The variables within the process that were the most important have been identified as variables affecting both cognitive/systematic as well as heuristic processing. The subjects varied in their attention to either systematic or heuristic variables. The only trend seemed to represent use of both types of cues in the operation of informational processing.

This ethnographic study did not isolate or control for multi-variable interactions. The interviews were conducted in an attempt to consider the different variables in a "natural" setting, but a qualitative difference was established. This study did not attempt to measure the extent of attitude formation or change; rather, it concentrated on the "natural" process as it occurred during an educational program. The findings of this study indicates that the previous literature and research may *not* be an accurate representation of how individuals undertake informational processing in a non-laboratory setting.

IX. General Implications for Further Research

Several implications for further research are suggested by this study. There are gaps in the present literature which may only be addressed by further research conducted along different lines than the classic cognitive approaches to information processing.

There also is support within this study that demonstrates there is more happening than cognitive or non-cognitive approaches to information processing. More research needs to be done to better understand the connection between conformity and informational processing. This study has found that the variable *Audience Reaction/Consensus* plays an important role in information processing. The theories involved in conformity and social comparison may provide further support in connection with information processing models. Exploration of this connection between conformity and cognitive approaches to attitudes may yield interesting conclusions.

Primarily, further work is needed in exploring the importance of *affect*. This study indicates that individuals may rely to a greater extent on emotion-producing information than previously expected. The impact of *affect* as a persuasive tool has been explored, but the usefulness of this variable in cognitive approaches to information processing needs additional analysis. As Wu and Shaffer (1987) stated: "Strong emotional reactions stemming from affectively salient and accessible attitudes may be an important spark that

ignites both the generation and consolidation of those message relevant elaborations that underlie persuasion according to the central route." In other words, just as the HSM places *affect* within the more systematic route, this study indicates that *affect* plays a greater role in information processing than any of the research has thus far suggested.

Also to be considered by future research is the direction of causality with regard to the role of *affect*. The nature of the topic of the presentation may generate *affect*, especially with regard to programs addressing social concerns and problems. The weakness of the construct of this study is that if the program topic generated *affect*, it cannot then be argued that the *affect* led to further processing because, in effect, the processing led to the *affect*. Research needs to be concerned with establishing a causal direction for *affect* in a cognitive informational processing model. The role of *affect* according to the findings of this study would seem to increase processing, but it may be the *affect* was a result of the topic being processed.

Further work in the area of *affect* may be valuable in designing educational programs that provide the most effective and efficient educational tools. Once a direction of causality can be established, educational program could be produced to utilize *affect* in ways that maximize cognitive processing.

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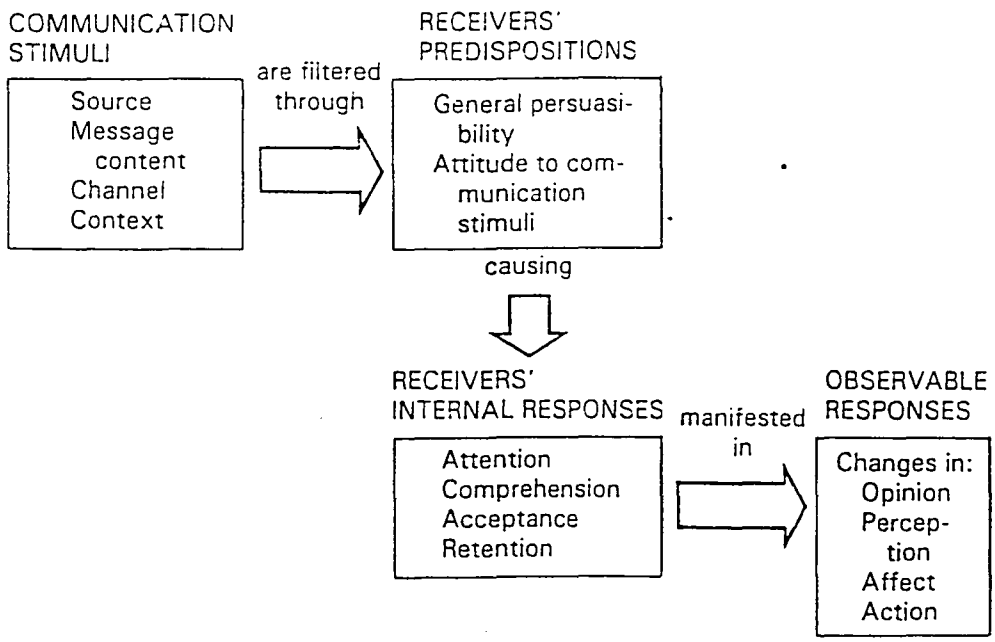
XI. Appendices

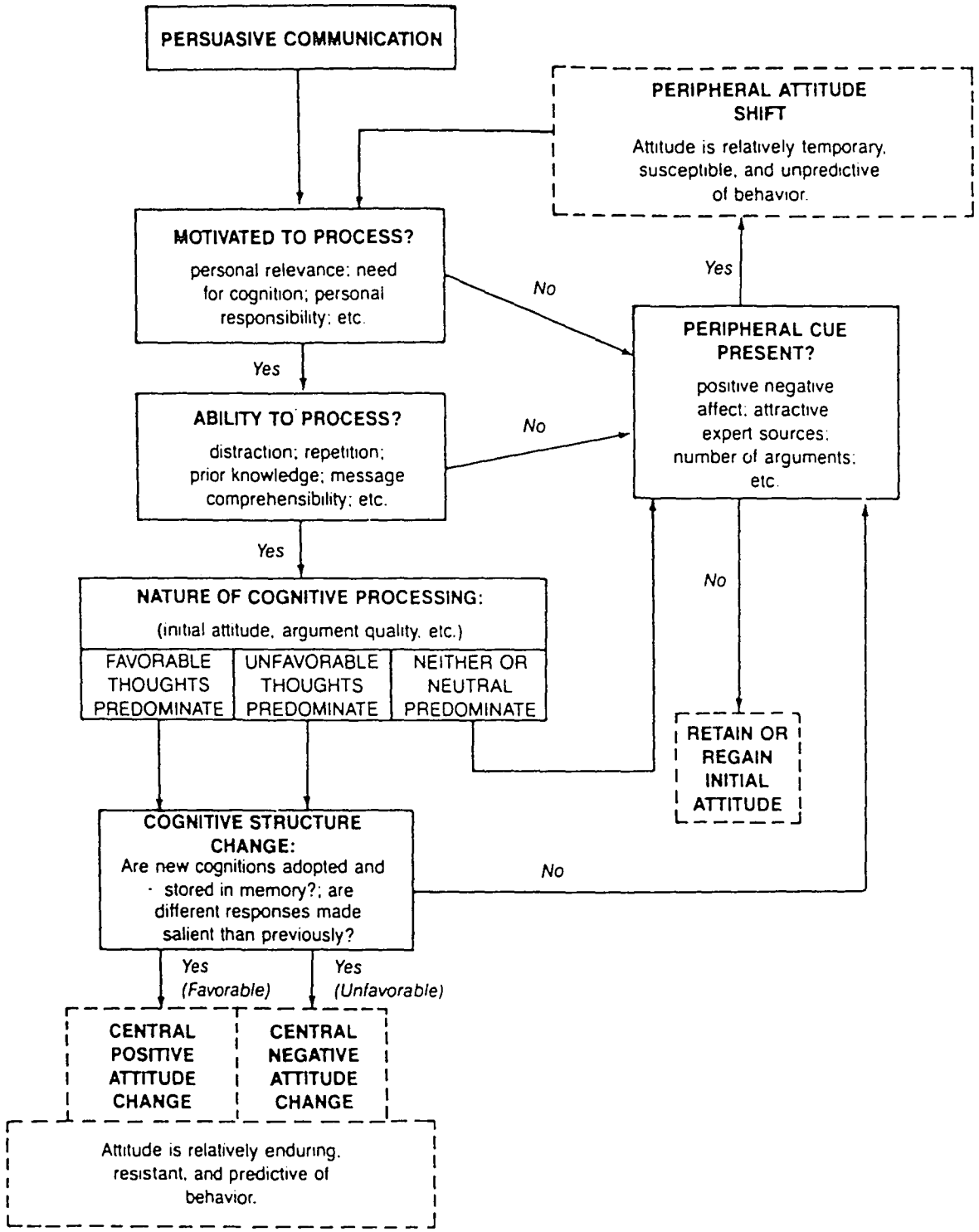
Appendix A: Graphs and Figures



A Simple Summary of the Steps in Persuasion Accoding to the Yale Attitude Approach

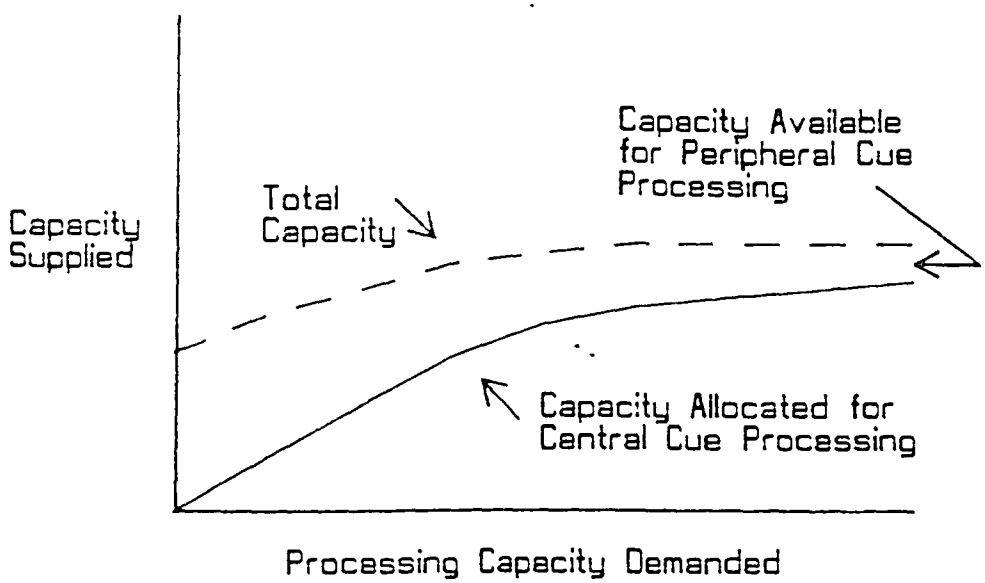
Adapted form Irving L. Janis and others, *Personality and Persuasibility* (New Haven: Yale University Press, 1959), p. 4.

Figure 1.



Schematic Depiction of the Two Routes to Persuasion. This Diagram Depicts the Possible Endpoints after Exposure to a Persuasive Communication According to the Elaboration Likelihood Model (Figure Adapted from Petty & Cacioppo, 1981, 1986b).

Figure 2.



A MODEL OF PERSUASIVE CUE PROCESSING

Figure 3.

Appendix B: Data Collection and Measures

Session Title:_____ Presenters:_____
Location:_____ Time:_____

Sex: Male/Female Year in School: Fr./So./Jr./Sr. Age:_____

PLEASE CIRCLE THE NUMBER WHICH MOST APPROXIMATELY REFLECTS YOUR OPINION

	AGREE				DISAGREE
The presenter(s) was well prepared.	1	2	3	4	5
The presentation was organized in a professional manner.	1	2	3	4	5
The presenter(s) manner was friendly.	1	2	3	4	5
The program seemed too lengthy.	1	2	3	4	5
There was too much information presented.	1	2	3	4	5
I agreed with the information presented.	1	2	3	4	5
The rest of the audience agreed with the information presented.	1	2	3	4	5
The content of the presentation was relevant and useful.	1	2	3	4	5
Based on what I had heard about it, I wanted to attend this program.	1	2	3	4	5
I have heard much of this material before.	1	2	3	4	5
This issue is very important to me.	1	2	3	4	5
Overall, I believe the session went very well.	1	2	3	4	5

The session could have been:

More detailed More general Expanded No change

Additional comments or suggestions:_____

_____

_____

INFORMED CONSENT FORM

I, _____, hereby agree to participate as a subject in the research investigation on **information processing** conducted by Darrin Halsey under the direction of Professor Robert Rosenwein in the Department of Sociology and Anthropology.

It has been explained to me that the purpose of the study is to learn how different individuals choose to use or process the information presented to them in the I.C.A.R.E. program.

The procedures which will be used in this study are voluntary participation in an interview session following participation in an I.C.A.R.E. program.

I understand that possible risks to me associated with the study are inconvenience to me from a loss of the time necessary for the interview session following the program, as well as potential emotional risks due to any discussion of why particular information affected me in any way.

I understand that the possible benefits to me from participation in this study are an increased awareness about what I choose to focus on when presented with information in a program of this sort (i.e., the I.C.A.R.E. program). I also understand that I may not receive any direct benefit from participating in this study, but participation may help to increase knowledge that may benefit others in the future.

Darrin Halsey (215)758-3812 has offered to answer any questions that I may have about the study and what is expected of me in the study.

I understand that any answers to questions will remain confidential with regard to my identity.

I understand that my participation is voluntary and that I am free to withdraw from the study and terminate the interview at any time without jeopardizing my relationship with Lehigh University.

Problems that may result from my participation in this study, may be reported to Linda F. Cope, Program Administrator, Office of Research and Sponsored Programs, Lehigh University, (215) 758-4861.

I have read and understand the foregoing information.

_____ _____

Date Subject's Signature

I, the undersigned, have defined and fully explained the investigation to the above subject.

_____ _____

Date Investigator's Signature

In-depth Interview Format

1. Did you feel that the presenter(s) were well prepared? Why?

2. Was the presentation organized and well put together?

3. Did you like the presenter(s)? What about their presentation style?

4. Why did you attend this program?

5. Was the program too long? Was there too much information presented?

6. Did you pay attention to the presenters? Why or why not?

7. What part of the program did you find most interesting (did you learn the most from) and why?

8. What part of the presentation caught your attention/did you pay attention to? Why?

9. Did you think about what was presented in this program? Why or why not?

10. Did you learn anything new or different?

11. What was more important to you, the presenters opinions and viewpoints or the audiences opinions/viewpoints?

12. Was there any part of the presentation that you would change? Why?

XII. Brief Biography

Darrin Halsey was born in Oklahoma City, Oklahoma on September 25, 1969. When he was six weeks old, his mother returned to New York, where he grew up in Water Mill (on Long Island). He graduated from Southampton High School in 1987. In 1991, he received a B.A. in International Careers from Lehigh University, with a concentration of study in East Asian Studies and a minor in Law and Legal Institutions.

After graduation, Darrin remained at Lehigh University to continue his education. He expects to receive a M.A. in Social Relations in May 1993. During his graduate studies at Lehigh, Darrin was a Teaching Assistant for *Introduction to Social Psychology*, *Introduction to Sociology*, and *Terrorism and the Media*.

During his Lehigh career, Darrin was a member of the Gryphon Society (1988-1990), Student Senate (1990-1991) and Delta Tau Delta fraternity. He was an Assistant Teacher for the Human Sexuality class in the 1989 spring semester. Darrin was also extremely involved with I.C.A.R.E. (Individuals Concerned About Rape Everywhere), where he coordinated the program his last two years (1991-1993).

Following his most recent graduation, Darrin intends to pursue employment in the academic environment as a Instructor/Professor of Social Sciences in a community college.

END

OF

TITLE